

2-1 Problem-Solving Investigation: Make a Table - Analyze the Strategy

1. Explain when to use the make a table strategy to solve a problem.

Sample answer: any time there is a multiple number of data

2. Tell the advantages of organizing information in a table.

Sample answer: The information is easy to locate and it is easier to draw conclusions from organized data. The disadvantage may be that it takes a little time to organize it.

3. **WRITING IN MATH** Write a real-world problem that can be solved using the make a table strategy. Then show how to solve the problem.

Sample answer: You're given a list of people and the songs that they like. The list of songs they like are: D D A B C B D D B A A B A B B D D B B C B B. You are asked what the most popular song is. Make a table that lists the songs, tally marks, and the total for each song. The most popular song was song B.

Favorite Songs		
Song	Tally	Frequency
A	1111	4
B	11111 11111	10
C	11	2
D	11111 1	6

2-1 Problem-Solving Investigation: Make a Table - Mixed Problem Solving

Use the *make a table* strategy to solve.

Name: School: Grade: Class:

5. MUSIC The table shows the number of songs downloaded in one month by each student in Mr. Jordan's class. Make a frequency table of the data. How many students downloaded at least 10 songs?

Number of Songs Downloaded							
0	5	12	8	11	15	8	9
2	23	9	3	0	6	12	7
2	4	3	0	19	1	6	13

Explore: We need to find how many students downloaded at least 10 songs in one month.

Plan: Make a frequency table of the data.

Solve: Draw a table with three columns. In the first column, list the number of songs less than 10 and at least 10 that students downloaded. Then complete the table by indicating the frequency or number of songs less than 10 or at least ten that were downloaded.

7 students downloaded at least 10 songs.

Number of Songs Downloaded		
Number of Songs	Tally	Frequency
less than 10	1111111111 1111111	17
at least 10	1111111	7

Check: If you go back to the list, there should be 7 students that downloaded at least 10 songs.

Use any strategy to solve.

Some strategies are shown below.

PROBLEM-SOLVING STRATEGIES

Guess and check.

Make a table.

7. CARS The table shows the color of the cars parked in a parking lot. How many more silver cars were in the parking lot than red?

Cars Parked in the Parking Lot							
W	R	S	G	S	S	G	B
B	S	S	R	R	G	W	S
R	W	G	B	S	W	S	B
B	S	W	S	W	S	B	B
S = silver R = red B = black G = green W = white							

Explore: We need to find out how many more silver cars were in the parking lot than red

Plan: Make a frequency table of the data.

Solve: Draw a table with three columns. In the first column, list each car color in the parking lot. Then complete the table by indicating the frequency or number of times each car color occurs.

11 cars are silver and 4 cars are red. So $11 - 4$ or 7 more cars were silver than red.

Check: If you go back to the list, there should be 11 cars that were silver and 4 cars that were red. So an answer of 7 is correct.

Name: School: Grade: Class:

9. MAIL Each day, Monday through Saturday, about 2,300 pieces of mail are delivered by each residential mail carrier in a certain town. About how many pieces of mail are delivered by each carrier in five years?

Explore: We know about how many pieces of mail are delivered each day by the mail carriers. We need to find how many pieces of mail are delivered each year.

Plan: Use estimation and multiplication to find the approximate number of pieces of mail.

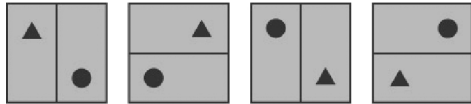
Solve: $2,000 \text{ pieces a day} \times 6 \text{ days a week}$
 $= 12,000 \text{ pieces per week}$

$12,000 \text{ pieces} \times 50 \text{ weeks} = 600,000 \text{ pieces per year}$

$600,000 \text{ pieces} \times 5 \text{ years} = 3,000,000 \text{ pieces in 5 years}$

Check: Divide 3,000,000 by 5 years to get 600,000 pieces per year. Divide 600,000 by 50 weeks to get 12,000 pieces per week. Divide 12,000 by 6 to 2,000 pieces per day.

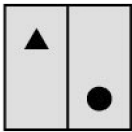
11. PATTERNS Find the next figure in the pattern.



Explore: We have a sequence of figures that contains a pattern. We need to draw the next figure.

Plan: Look for a pattern in the figures. Then extend the pattern to draw the next figure.

Solve: Each figure after the first is the first figure rotated 90° clockwise, with the little triangle altered to have a point facing up. The next figure will be the fourth figure rotated 90° clockwise, with the little triangle altered to be facing up. This is the same as the first figure.



Check: The figure continues the pattern.

13. SCHOOL Of the 150 students at Lincoln Middle School, 55 are in the orchestra, and 75 are in marching band. Of these students, 25 are in both orchestra and marching band. How many students are neither in orchestra nor in marching band?

Explore: We know the numbers of students in orchestra, marching band, and both. We need to find the number of students in neither orchestra nor marching band.

Plan: Find the total number of students in at least one of orchestra and marching band. Then subtract this result from the total number of students at the school.

Solve: Since there are 55 students in orchestra and 25 of these are also in band, there are $55 - 25$ or 30 students who are in orchestra but not band. Since there are 75 students in band and 25 of these are also in orchestra, there are $75 - 25$ or 50 students who are in band but not orchestra. So, there are $30 + 50 + 25$ or 105 students who are in orchestra or marching band or both. There are 150 students in the school, so there are $150 - 105$ or 45 students who are in neither orchestra nor marching band.

Check: Make a Venn Diagram to check the relationships between the numbers